

REMARKS

Claim 39 is in the case and presented for consideration. Claims 25-38 have been cancelled without prejudice. New Claim 39 has been added. No new matter has been added.

The Applicant confirms the election to prosecute the invention of species 2 (the ultrasound position sensor – Claims 32-38) based on the telephone conversation with the Examiner on January 6, 2003. These claims have been cancelled without prejudice.

The Specification has been amended to include the continuing data as requested. Additionally, a new title and Abstract have been provided in an effort to be more reflective of the Applicant's invention of new Claim 39.

Turning now to the Applicant's claimed invention as amended, the present invention of new Claim 39 is directed toward a method for assessing functionality of a valve in a heart wherein the method comprises the steps of providing a wireless transponder for transmitting or receiving an ultrasound wave for determination of position coordinates of the wireless transponder; implanting the wireless transponder at a point on the valve; monitoring movements of the valve and the wireless transponder attached at the point using a position determining system operating by using ultrasound waves for determining position coordinates of the wireless transponder by transmitting the ultrasound wave to the wireless transponder or receiving the ultrasound wave from the wireless transponder; determining position coordinates of the wireless transponder using the position determining system; and determining whether the valve is functioning properly based on the position coordinates of the wireless transponder.

The support for new Claim 39 can be found in the Applicant's Specification, for example, Page 14, Lines 23-30.

The Applicant would also like to point out that U.S. Patent No. 5,515,853 (Smith et al.) is directed toward a three-dimensional digital ultrasound tracking system that is entirely distinct from the Applicant's claimed invention. Particularly, the Smith et al. system utilizes sonomicrometer crystals that are used in a number of specific surgical applications. It is

important to note that the Smith et al. reference lacks any specific teaching or suggestion of a method utilizing an ultrasound transponder for assessing functionality of a heart valve by determining position coordinates of the transponder. Moreover, for those procedures detailed in the Smith et al. reference, it is important to note that the Smith et al. sonomicrometer is not in any way a wireless transponder such as found with the Applicant's claimed invention. For example, see the example procedure entitled "ix) Assessment of Myocardial Contractility Following Surgery" where it states:

These transducers can be attached to the myocardium during open chest surgery and can measure the contractility of the heart directly while the chest is open. The leads can then be strung out through the chest wall, and monitoring of myocardial contractility can continue for a few hours or days post operatively... If the crystals are properly positioned, they can be removed post operatively by pulling on them, in much the same way that pacing electrodes are removed.
Column 16, Lines 42-53.

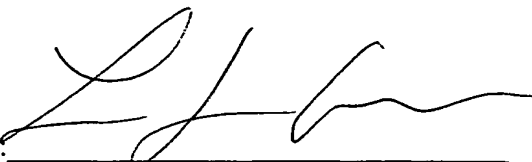
Accordingly, it is clear that the Smith et al. micrometer crystals are both hard-wired (not in any way wireless such as found with Applicant's claimed invention) and used in invasive procedures such as "open-chest surgery". Accordingly, Smith et al. actually teaches a way from the minimally invasive wireless transponder method for accessing functionality of a heart valve in accordance with the present invention to include using a position determining system for determining position coordinates of the wireless transponder.

Accordingly, by this Amendment and for the reasons listed above, the claimed present invention is both patentably distinct and non-obvious over the prior art of record and favorable action is respectfully requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) is/are captioned "Version with markings to show changes made".

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Please delete the title and substitute therefore a new title as follows:

[IMPLANTABLE SENSOR FOR DETERMINING POSITION COORDINATES]

METHOD USING IMPLANTABLE WIRELESS TRANSPONDER USING
POSITION COORDINATES FOR ASSESSING FUNCTIONALITY OF A HEART VALVE

After the title, please insert the new paragraph as follows:

This Application is a Continuation Application of U.S. Patent Application Serial No. 09/381,753 filed April 13, 2000 which is a Continuation-in-Part Application of U.S. Patent Application Serial No. 08/595,365 filed February 1, 1996, now issued U.S. Patent No. 5,738,096.

In the Claims:

Please add new Claim 39 as follows:

Claim 39. A method for assessing functionality of a valve in a heart, the method comprising the steps of:

providing a wireless transponder for transmitting or receiving an ultrasound wave for determination of position coordinates of the wireless transponder;

implanting the wireless transponder at a point on the valve;

monitoring movements of the valve and the wireless transponder attached at the point on the valve using a position determining system operated by using ultrasound waves for determining position coordinates of the wireless transponder by transmitting the ultrasound

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wave to the wireless transponder or receiving the ultrasound wave from the wireless transponder;

determining position coordinates of the wireless transponder using the position determining system; and

determining whether the valve is functioning properly based on the position coordinates of the wireless transponder.